Contents

Preface	vi
Conference organization	iz
Supporting organizations and sponsors)
Excimer laser polymer ablation: formation of positively charged surfaces and its application into the metallization of polymer films H. Niino and A. Yabe	1
Structure of metallic multilayers studied by X-ray absorption spectroscopy S. Pizzini, F. Baudelet, A. Fontaine, D. Chandesris, H. Magnan, A. Fert and C. Marlière	7
Designing surface properties of textile fibers by UV-laser irradiation T. Bahners, W. Kesting and E. Schollmeyer	12
Laser-induced surface modification and structure formation of polymers E. Arenholz, J. Heitz, M. Wagner, D. Bäuerle, H. Hibst and A. Hagemeyer	16
Mechanisms of synchrotron radiation-excited etching reactions of semiconductor materials H. Ohashi, A. Yoshida, K. Tabayashi and K. Shobatake	20
Temperature dependence of synchrotron radiation induced growth initiation in the molecular beam chemical vapor deposition of Al on a SiO ₂ surface F. Uesugi and I. Nishiyama	27
Large scale excimer laser production of submicron periodic structures on polymer surfaces M. Bolle and S. Lazare	31
Maskless excimer laser induced projection patterning of InP in Cl_2 etch gas R. Heydel, R. Matz and W. Göpel	38
Reflectance anisotropy from (001) GaAs surfaces during pseudo-ALE growth of GaAs S.R. Armstrong, R.D. Hoare, I.M. Povey, M.E. Pemble, A. Stafford, A.G. Taylor and D.R. Klug	46
Laser etching of silicon by chlorine: effect of post-desorption collisions and chlorine in-diffusion on the laser desorption yield	
A. Aliouchouche, J. Boulmer, B. Bourguignon, JP. Budin, D. Débarre and A. Desmur ArF excimer laser deposited tin oxide films studied by "in situ" surface diagnostics and by synchrotron radiation induced UV photoemission	52
R. Larciprete, E. Borsella, P. De Padova, M. Fanfoni, M. Mangiantini and P. Perfetti	59
Nondestructive evaluation of solids and deposited films by thermal-wave interferometry E. Oesterschulze, M. Stopka, M. Tochtrop-Mayr, K. Masseli and R. Kassing	65
Laser direct writing of gold to repair defective lines in thin-film metallizations D. Metzger and H. Reichl	69
High speed laser writing of gold lines from organic solutions K. Bali, T. Szörényi, M.R. Brook and G.A. Shafeev	75
Deposition of micron-size nickel lines by argon-ion laser-assisted decomposition of nickel tetracarbonyl S. Boughaba and G. Auvert	79
Laser direct-write Al deposition on Si, GaAs and diamond from trialkylamine-alane precursors F. Foulon, O. Lehmann and M. Stuke	87

Direct deposition of patterned copper films on Teflon W.L. Perry, K.M. Chi, T. Kodas, M. Hampden-Smith and R. Rye	9
The ohmic contact formation mechanism in laser beam mixed Au/Te/Au/GaAs structures J. Watté, R.E. Silverans, M. Van Hove and K. Wuyts	10
High-intensity KrF excimer laser processing of metal surfaces J.E. Montagne, Th. Sarnet, Ch. Prat, G. Inglesakis and M. Autric	10
Critical issues for single-chamber manufacturing: the role of laser technology D.J. Ehrlich	11:
Fabrication and characterization of selectively grown $\mathrm{Si}_{1-x}\mathrm{Ge}_x/\mathrm{Si}\ p^+/n$ heterojunctions using pulsed induced epitaxy and gas immersion laser doping KJ. Kramer, S. Talwar, E. Ishida, K.H. Weiner and T.W. Sigmon	laser
A novel VUV photochemical deposition apparatus C. Manfredotti, F. Fizzotti, M. Boero and G. Piatti	12
A simple formalism for the prediction of angular distributions in laser ablation deposition J.C.S. Kools, E. van de Riet and J. Dieleman	13:
Pulsed laser deposition and processing of biocompatible hydroxylapatite thin films C.M. Cotell	140
Lithium niobate films grown by excimer laser deposition C.N. Afonso, F. Vega, J. Gonzalo and C. Zaldo	149
Pulsed laser deposition growth of ZnSe, MnSe, and ZnSe/MnSe epilayers J. Misiewicz, C. Huber, D. Heiman and T.Q. Vu	156
Pulsed laser ablation and deposition of semiconducting thin films: characterization of transient species A. Giardini Guidoni, A. Mele, G. Pizzella and R. Teghil	161
Mass spectrometric investigation of the KrF laser-induced plasma plume created above an YBaCuO super ducting target: correlation with thickness distribution of deposited thin films C. Champeaux, D. Damiani, J. Aubreton and A. Catherinot	con-
Time-resolved diagnosis of processes in PLD of ceramics A. Voss, E.W. Kreutz, J. Funken, M. Alunovic and H. Sung	174
Time-resolved absorption studies of excimer laser ablation of CaF ₂ R. Mitzner, A. Rosenfeld and R. König	180
VUV light production from a formed-ferrite plasma source M.L. Sentis, Ph. Granier, F. Chazaud, W.I. Marine, M. Gerry and R.C. Sze	185
New lamp arrangement for rapid thermal processing JP. Zöllner, K. Ullrich, J. Pezoldt and G. Eichhorn	193
Bulk and surface properties of RTCVD Si ₃ N ₄ films for optical device applications F. Lebland, Z.Z. Wang, J. Flicstein, C. Licoppe and Y.I. Nissim	198
Pulsed laser deposition – a versatile technique only for high-temperature superconductor thin-film depositi HU. Habermeier	ion?
Hetero-epitaxial oxidic conductor La _{1-x} Sr _x CoO ₃ prepared by pulsed laser deposition J.F.M. Cillessen, R.M. Wolf and A.E.M. De Veirman	212
Laser ablation studies of magnesium oxide L. Dirnberger, P.E. Dyer, S. Farrar, P.H. Key and P. Monk	216
Deposition of YBa ₂ Cu ₃ O _x by laser ablation on Si(100) using different buffer layers F. Sánchez, M. Varela, X. Queralt, M.V. García-Cuenca, J. Palau, R. Aguiar and J.L. Morenza	221
Dynamics of graphite photoablation: kinetic energy of the precursors to diamond-like carbon P.T. Murray and D.T. Peeler	225
Pulsed laser crystallization and doping for the fabrication of high-quality poly-Si TFTs E. Fogarassy, H. Pattyn, M. Elliq, A. Slaoui, B. Prevot, R. Stuck, S. de Unamuno and E.L. Mathé	231

Laser-induced modifications in a-C:H thin films J. Spousta, J. Perrière, A. Laurent, E. Fogarassy, B. Prevot and S. de Unamuno	242
Shallow p-n junctions produced by laser doping with boron silicate glass D. Bollmann, G. Neumayer, R. Buchner and K. Haberger	249
Single-shot micro-patterning of polymer surfaces by UV incubation/dye laser ablation using photochromism S. Preuss and M. Stuke	253
SF ₆ sensitized CO ₂ laser CVD of amorphous silicon E. Golusda, P. Hessenthaler, G. Mollekopf and H. Stafast	258
Effects of UV light on the deposition kinetics and optoelectronic properties of a-Si:H films deposited by RF glow discharge	262
N. Layadi, P. Roca i Cabarrocas, V. Yakovlev and B. Drévillon Laser-induced CVD of titanium diboride and the influence of atomic hydrogen J. Elders and J.D.W. van Voorst	262
Laser induced fluorescence spectroscopy of WF_6/M (M = H_2 , Ar) gas mixtures during LCVD of W at a high laser energy density	
P. Heszler, P. Mogyorósi and J.O. Carlsson	272
Low temperature deposition of SiO ₂ and PSG using SiH ₄ , N ₂ O and phosphorous vapour for damage-free passivation of InP-based PIN diodes by plasma- and photo-assisted LPCVD R. Riemenschneider, N. DasGupta, R. Schütz, H.L. Hartnagel and H. Kräutle	277
The role of silane and N2O in the CO2 laser-CVD of silicon oxide films	
D. Fernández, P. González, J. Pou, E. García, J. Serra, B. León and M. Pérez-Amor	281
"In situ" XPS study of the photoassisted reduction of noble-metal cations on TiO ₂ A. Fernández and A.R. González-Elipe	285
Laser induced plasma formation by picosecond pulse irradiation W. Marine, M. Gerri, P. Thomsen-Schmidt and J.M. Scotto d'Aniello	290
Large area photochemical dry etching of polyimide with excimer UV lamps J.Y. Zhang, H. Esrom, U. Kogelschatz and G. Emig	299
Laser-induced deposition of aluminium on gallium arsenide and silicon nitride from trimethylamine alane T. Frugier, A. Boulahia, A. Sayah, D. Tonneau, J.E. Bourée, J.M. Siffre and D. Mencaraglia	305
A comparison of SiO_2 thin-film UVCVD rates and mechanisms from SiH_4/O_2 and SiH_4/N_2O precursor gases by surface-sensitive infrared spectroscopy C. Debauche, C. Licoppe and J. Flicstein	310
Ar ⁺ laser-induced forward transfer (LIFT): a novel method for micrometer-size surface patterning Z. Tóth, T. Szörényi and A.L. Tóth	317
Laser beam deflection monitoring of Nd: YAG laser ablation: pulse shape and repetition rate effects J. Diaci and J. Možina	321
Quest for high quality local electroless laser deposition from the liquid phase: decomposition of ammonium molybdate	
K. Bali, Zs. Geretovszky, A.L. Tóth and T. Szörényi	326
Time resolved reflectivity and transmission measurements during laser induced blow-off of thin metal films Z. Tóth, J. Solis, C.N. Afonso, F. Vega and T. Szörényi	330
In situ growth of YBaCuO superconducting thin films by excimer laser ablation: influence of deposition and cooling parameters C. Champeaux, P. Marchet, J. Aubreton, JP. Mercurio and A. Catherinot	335
Laser studies of polystyrene precursors performed through resonant two photon ionization processes in a	333
supersonic molecular beam A. Giardini Guidoni, S. Piccirillo, M. Coreno, M. Snels, A. Morone and R. Teghil	340
Tungsten silicide formation by multipulse excimer laser irradiation S. Luby, E. Majkova, E. D'Anna, A. Luches, M. Martino, A. Tufano and G. Majni	345

Contents

An optical in-situ method for layer growth characterization N. Dietz and H.J. Lewerenz	350
Determination of the refractive index of In _{0.53} Al _{0.11} Ga _{0.36} As on InP in the wavelength range from 280 to 1900 nm by spectroscopic ellipsometry H.W. Dinges, H. Burkhard, R. Lösch, H. Nickel and W. Schlapp	355
Laser ablation of graphite targets C. Germain, C. Girault, J. Aubreton and A. Catherinot	359
Laser deposition of thin films of high T_c superconductors. In situ analysis of the transient species formed in the plume and surface diagnostics of the deposited material A. Giardini Guidoni, I. Pettiti, A. Morone, V. Marotta, M. Snels, G.P. Parisi and G. Bentivenga	365
Acoustic in situ monitoring of excimer laser ablation of different ceramics L. Grad and J. Možina	370
Time resolved spectroscopy of the emission of fluorescent light upon UV laser assisted CVD of W from WF_6 P. Heszler, P. Mogyorósi and J.O. Carlsson	376
Laser CVD on carbon fibres: structure of layers and tensile strength of fibres V. Hopfe, S. Böhm, G. Wieghardt and A. Schulze	380
In situ second harmonic generation measurements during the electrodeposition of Ni on n-Si(111) J. Krüger, N. Sorg, J. Reif and W. Kautek	388
Direct photo-deposition of silicon dioxide films using a xenon excimer lamp P. Bergonzo, U. Kogelschatz and I.W. Boyd	393
Rapid thermal and large area processing of thin films with a line electron beam M. Pauli, G. Dähn, J. Müller and M. Döscher	398
Real time emission spectroscopy during deposition of germanium oxide films by laser ablation F. Vega, C.N. Afonso and J. Solis	403
A new encapsulation method of InP during post implantation annealing A. Kadoun, J. Tardy, I. Thomas, M. Gendry, V. Drouot, G. Bremond, D. Barbier and A. Laugier	407
Laser direct writing of titanium silicide thin films G. Reisse, F. Gänsicke, A. Fischer and H. Johansen	412
Determination of UV-laser induced surface structures by atomic force microscopy L. Wefers, D. Bosbach, W. Rammensee and E. Schollmeyer	418
Internal second-harmonic generation in CW AlGaAs SQW lasers: the facet degradation monitoring I.V. Kravetsky, L.L. Kulyuk, A.T. Lupu, D.A. Shutov, G.I. Suruceanu, A.V. Syrbu and V.P. Yakovlev	424
Author index	429
Subject index	435

